AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF THE CLAIMS:

Claims 1-43 (cancelled)

44. (new) A semiconductor integrated circuit device comprising:

a correlation double sampling circuit for sampling an analog color video signal output from an imaging element;

an amplifying circuit for amplifying the analog color video signal output from the correlation double sampling circuit;

an AD conversion circuit for converting the analog color video signal amplified by the amplifying circuit to a digital signal comprising first codes;

a differential circuit for obtaining a difference between the first codes in regard to same colors; and

a code conversion circuit for code conversion of second codes corresponding to an output of the differential circuit,

wherein the correlation double sampling circuit, the amplifying circuit, the AD conversion circuit, the differential circuit, and the code conversion circuit are formed on a semiconductor substrate,

wherein a gain of the amplifying circuit can be varied,

wherein third codes corresponding to an output of the code conversion circuit are obtained from the code conversion circuit,

wherein change bits between a third code corresponding to a second code and a third code corresponding to a next to the second code are less in number than change bits between the second code and the next to the second code by the code conversion when the second code is positive and the next to the second code is negative,

wherein change bits between a third code corresponding to a second code and a third code corresponding to a next to the second code are less in number than change bits between the second code and the next to the second code by the code conversion when the second code is negative and the next to the second code is positive.

45. (new) A semiconductor integrated circuit device according to claim 44,

wherein the code conversion circuit is a binary gray code conversion circuit for converting an input binary code to a gray code as the output of the differential circuit.

46. (new) A semiconductor integrated circuit device according to claim 44,

wherein the code conversion circuit comprises a circuit for adding or subtracting a fixed value to or from an input code as the output of the differential circuit.

47. (new) A semiconductor integrated circuit device according to claims 44,

wherein the differential circuit comprises:

a delay circuit for delaying each of the first codes from the AD conversion circuit; and

a subtraction circuit for obtaining a difference between each of the first codes delayed by the delay circuit and each of the first codes from the AD conversion circuit,

wherein the delay circuit is constructed to vary a delay time depending on a color arrangement of the analog color video signal so as to obtain the difference between the first codes in regard to the same colors .

48. (new) A semiconductor integrated circuit device according to claims 44, wherein change bits between a third code corresponding to a second code and a third code corresponding to a next to the second code are less in number than change bits between the second code and the next to the second code by the code conversion, if a relation between the second code and the next to the second code is an inversed relation based on a complement representation.

49. (new) A semiconductor integrated circuit device comprising:

a correlation double sampling circuit for sampling an analog color video signal output from an imaging element;

an amplifying circuit for amplifying the analog color video signal output from the correlation double sampling

circuit;

an AD conversion circuit for converting the analog color video signal amplified by the amplifying circuit to a digital signal comprising first codes;

a differential circuit for obtaining a difference between the first codes in regard to same colors; and

a code conversion circuit for code conversion of second codes corresponding to an output of the differential circuit,

wherein the correlation double sampling circuit, the amplifying circuit, the AD conversion circuit, the differential circuit, and the code conversion circuit are formed on a semiconductor substrate,

wherein a gain of the amplifying circuit can be varied,

wherein third codes corresponding to an output of the code conversion circuit are obtained from the code conversion circuit,

wherein change bits between a third code corresponding to a second code and a third code corresponding to a next to the second code are less in number than change bits between the second code and the next to the second code by the code conversion, if a relation between the second code and the next to the second code is an inversed relation based on a complement representation.

50. (new) A semiconductor integrated circuit device according to claim 49,

wherein the code conversion circuit is a binary gray code conversion circuit for converting an input binary code to a gray code as the output of the differential circuit.

51. (new) A semiconductor integrated circuit device according to claim 49,

wherein the code conversion circuit comprises a circuit for adding or subtracting a fixed value to or from an input code as the output of the differential circuit.

52. (new) A semiconductor integrated circuit device according to claims 49,

wherein the differential circuit comprises:

a delay circuit for delaying each of the first codes from the AD conversion circuit; and

a subtraction circuit for obtaining a difference between each of the first codes delayed by the delay circuit and each of the first codes from the AD conversion circuit,

wherein the delay circuit is constructed to vary a delay time depending on a color arrangement of the analog color video signal so as to obtain the difference between the first codes in regard to the same colors .

53. (new) A semiconductor integrated circuit device comprising:

a correlation double sampling circuit for sampling an analog color video signal output from an imaging element;

an AD conversion circuit for converting the analog color video signal output from the correlation double sampling circuit to a digital signal comprising first codes;

a differential circuit for obtaining a difference between the first codes in regard to same colors; and

a code conversion circuit for code conversion of second codes corresponding to an output of the differential circuit,

wherein the correlation double sampling circuit, the AD conversion circuit, the differential circuit, and the code conversion circuit are formed on a semiconductor substrate,

wherein the third codes corresponding to an output of the code conversion circuit are obtained from the code conversion circuit,

wherein change bits between a third code corresponding to a second code and a third code corresponding to a next to the second code are less in number than change bits between the second code and the next to the second code by the code conversion when the second code is positive and the next to the second code is negative,

wherein change bits between a third code corresponding to a second code and a third code corresponding to a next to the second code are less in number than change bits between the second code and the next to the second code by the code conversion when the second code is negative and the next to the second code is positive.

54. (new) A semiconductor integrated circuit device according to claim 53,

wherein the code conversion circuit is a binary gray code conversion circuit for converting an input binary code to a gray code as the output of the differential circuit.

55. A semiconductor integrated circuit device according to claim 53,

wherein the code conversion circuit comprises a circuit for adding or subtracting a fixed value to or from an input code as the output of the differential circuit.

56. A semiconductor integrated circuit device according to claims 53,

wherein the differential circuit comprises:

a delay circuit for delaying each of the first codes from the AD conversion circuit; and

a subtraction circuit for obtaining a difference between each of the first codes delayed by the delay circuit and each of the first codes from the AD conversion circuit,

wherein the delay circuit is constructed to vary a delay time depending on a color arrangement of the analog color video signal so as to obtain the difference between the first codes in regard to the same colors .

57. (new) A semiconductor integrated circuit device according to claims 53,

wherein change bits between a third code corresponding to a second code and a third code corresponding to a next to the second code are less in number than change bits between the second code and the next to the second code by the code conversion, if a relation between the second code and the next to the second code is an inversed relation based on a complement representation.

58. (new) A semiconductor integrated circuit device comprising:

a correlation double sampling circuit for sampling an analog color video signal output from an imaging element;

an AD conversion circuit for converting the analog color video signal output from the correlation double sampling circuit to a digital signal comprising first codes;

a differential circuit for obtaining a difference between the first codes in regard to same colors; and

a code conversion circuit for code conversion of second codes corresponding to an output of the differential circuit,

wherein the correlation double sampling circuit, the AD conversion circuit, the differential circuit, and the code conversion circuit are formed on a semiconductor substrate,

wherein third codes corresponding to an output of the code conversion circuit are obtained from the code conversion circuit,

wherein change bits between a third code corresponding to a second code and a third code corresponding to a next to

the second code are less in number than change bits between the second code and the next to the second code by the code conversion, if a relation between the second code and the next to the second code is an inversed relation based on a complement representation.

59. (new) A semiconductor integrated circuit device according to claim 58,

wherein the code conversion circuit is a binary gray code conversion circuit for converting an input binary code to a gray code as the output of the differential circuit.

60. (new) A semiconductor integrated circuit device according to claim 58,

wherein the code conversion circuit comprises a circuit for adding or subtracting a fixed value to or from an input code as the output of the differential circuit.

61. (new) A semiconductor integrated circuit device according to claims 58,

wherein the differential circuit comprises:

a delay circuit for delaying each of the first codes from the AD conversion circuit; and

a subtraction circuit for obtaining a difference between each of the first codes delayed by the delay circuit and each of the first codes from the AD conversion circuit, wherein the delay circuit is constructed to vary a delay time depending on a color arrangement of the analog color

video signal so as to obtain the difference between the first codes in regard to the same colors .